

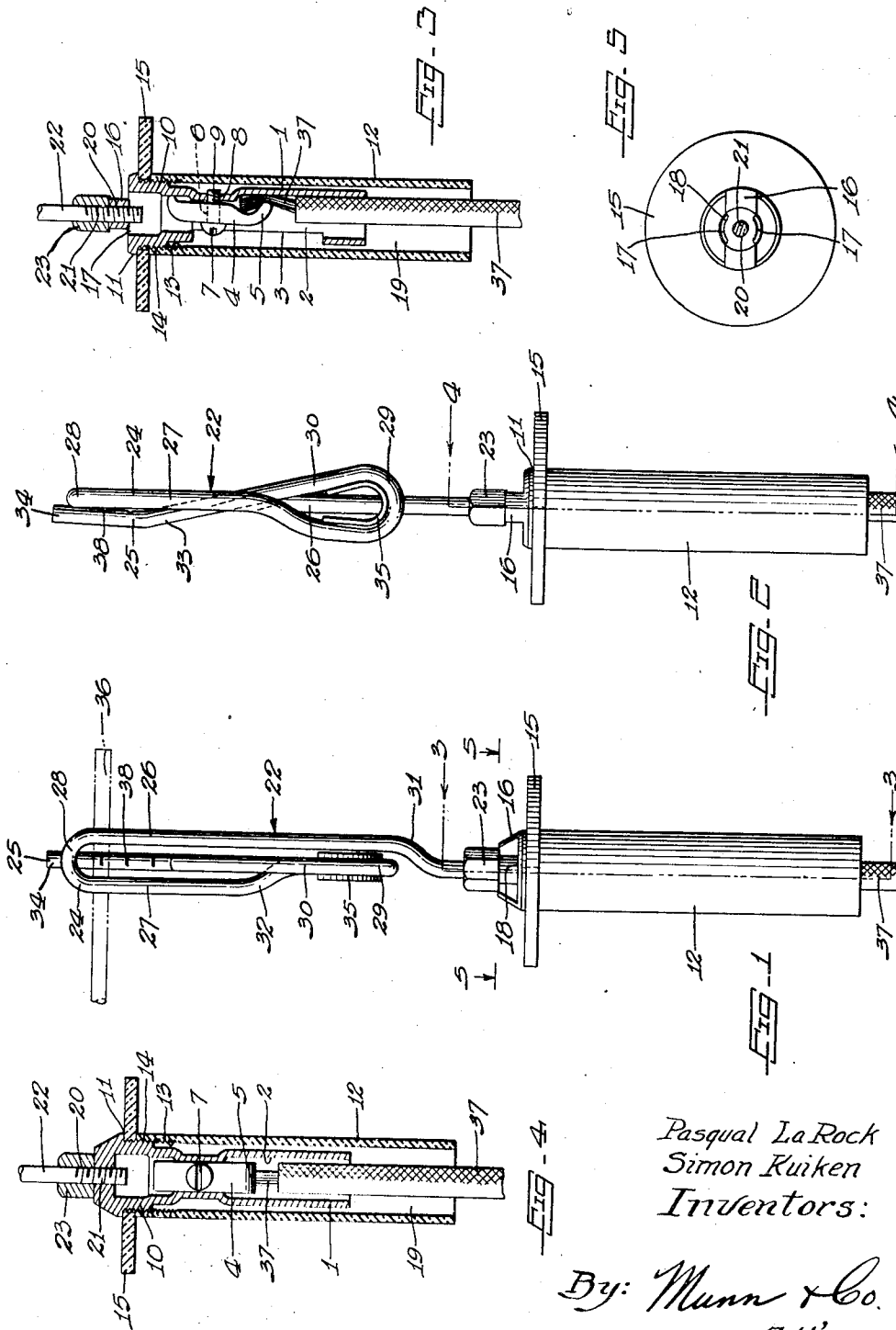
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P. LA ROCK ET AL

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ELECTRODE HOLDER

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Pasqual LaRock
Simon Kuiken
Inventors:

By: Munn & Co.
Attys.

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ELECTRODE HOLDER

Pasqual La Rock and Simon Kuiken, Chicago,
Ill.; said La Rock assignor to said Kuiken

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2 Claims. (Cl. 218—2)

Our invention relates to improvements in electrode holders, and it consists in the combinations, constructions, and arrangements herein described and claimed.

5 An object of our invention is to provide an electrode holder having a novel means for gripping the electrode.

A further object is to provide an electrode holder in which the electrode gripping means may be formed of a single piece of material for providing gripping jaws and in which means may be further provided for positively actuating the gripping jaws.

10 A further object is to provide an electrode holder in which the functioning of the gripping means will not be affected by high temperatures.

A further object is to provide an electrode holder in which the gripping means may be detachably connected with the handle means.

20 A further object is to provide an electrode holder having a handle means so constructed that air may circulate therethrough for cooling the handle.

A further object is to provide an electrode holder having novel means for detachably connecting a shield therewith so that the device may be utilized with or without the shield.

30 Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

Our invention is illustrated in the accompanying drawing, forming part of this application, in which

35 Figure 1 is an elevational view of the device,

Figure 2 is an elevational view of the device, said device having been rotated a quarter of a revolution from the position shown in Figure 1,

40 Figure 3 is a detail sectional view taken substantially along the line 3—3 of Figure 1,

Figure 4 is a detail sectional view taken substantially along the line 4—4 of Figure 2, and

Figure 5 is a sectional detail view taken along the line 5—5 of Figure 1.

45 In carrying out our invention, we provide a hollow body member 1 provided with a passageway 2 therein. The body member 1 may be constructed of any suitable metal such as bronze. The hollow body member 1 is provided with an opening 3 in the side thereof for providing access to the passageway 2. A gripping or clamping member 4 is disposed in the body member 1 and is provided with a gripping end portion 5. The gripping member 4 is also provided with an opening 6 therethrough for receiving a screw 7. The

body portion 1 is provided with a threaded opening 8 therein for receiving the threaded portion 9 of the screw 7. The screw 7 provides the means for adjustably connecting the gripping member 4 with the body portion 1. The body portion 1 is further provided with an enlarged end portion 10 which, in turn, is provided with an annular flange portion 11.

A tubular handle member 12 is disposed over the body member 1 and is positioned in spaced-apart relation with respect thereto. The handle member 12 is preferably cylindrical in shape and may be made of any suitable electrical insulating and heat insulating material such as fibrous material or composition. The handle member 12 has an end provided with internal threads 13 for receiving threads 14 of the enlarged portion 10 of the body member 1 whereby the handle member 12 may be detachably connected with the body member 1. A shield member 15 is provided which may be disc shaped and may be constructed of any suitable electrical insulating and heat insulating material such as the handle member 12 is constructed of. The disc member 15 may be positioned between the annular flange portion 11 of the body member 1 and the handle member 12 and may be fixedly held with respect to the body member 1 by the gripping action of the flange portion 11 and the handle member 12. The enlarged end portion 10 of the body member 1 is provided with a transverse projecting flange portion or bridge portion 16 integral therewith which is provided with cutaway portions 17 on opposite sides thereof for providing orifices 18 in communication with the chamber 19 between the handle member 12 and the body member 1. This construction enables air to circulate between the handle and the body member 1 and through the orifices 18. The bridge member 16 is provided with a threaded opening 20 therein for receiving the threaded end portion 21 of an elongated member or rod member 22. A locking member or nut 23 is disposed on the threaded end portion 21 of the rod member 22 for locking the rod member 22 with the body portion 1. The rod member 22 may be constructed of any suitable electrical conducting metal, preferably hard drawn copper.

The rod 22 is formed as shown in Figures 1 and 2 for providing electrode gripping jaw portions 24 and 25. The jaw portion 24 comprises spaced-apart portions 26 and 27 and the arcuate-shaped portion 28. The portion 27 continued is formed for providing a loop portion 29 which, in turn, is continued for providing an inclined ex-

tending portion 30. It will be noted that the side portions 26 and 27 are bent as at 31 and 32 so that the loop portion 29 and the extending portion 30 may be positioned substantially in alignment with the end portion 21 of the rod 22.

The inclined portion 30 extends between the portions 26 and 27 and may be bent as at 33 for terminating in the gripping jaw portion 25. The end portion 34 of the jaw portion 25 extends beyond the arcuate-shaped portion 23 with which it is normally in engagement. An arcuate-shaped spring member 35 may be provided within the loop portion 29 of the rod member 22 and tends to positively and resiliently hold the end portion 34 of the clamping portion 25 in engagement with the arcuate-shaped portion 23. The spring member 35 may be constructed of any suitable spring material such as vanadium steel which may be subjected to high temperatures without losing its resiliency.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood.

When the device is to be used such as for welding, the handle member 12 may be unscrewed from the body portion 1 and the electrical conducting wire or cable 37 connected with the body portion 1 by means of the clamping member 4. The handle member 12 is then reconnected with the body portion. Another electrical conductor or cable, not shown, may be connected with the material to be welded for providing a circuit.

An electrode 36 of the size desired may then be positioned between the jaw portions 24 and 25 and is held by the gripping action of the jaw portions. The jaw portion 25 may be provided with small recesses 38 therein whereby the electrode 36 may be disposed in a definite position with respect to the jaw members.

A switch is then actuated for permitting the current to flow through the cables and the device is ready for use.

When much of the electrode 36 has been used up in the welding process and it is desired to substitute another electrode therefor, it is merely

necessary to use the new electrode for prying the jaw portions 24 and 25 slightly farther apart, thereby causing the old electrode to be released by the jaw portions whereby it may fall therefrom. The new electrode is then slidably moved between the jaw portions. Thus it will be seen that the old electrode may be quickly and easily replaced by a new electrode without the operator having to handle a heated member. It will also be seen from the above description that the gripping member 22 may be quickly and easily replaced by another gripping member if for any reason it may be found desirable to do so.

We claim:

1. An electrode holder comprising a conducting body having an axial air passage there-through, means for securing a conductor directly to the interior of said body, a member on said body bridging the forward open end of said passage, an electrode gripping member carried by said bridging member, and a hollow handle secured to the forward end of said body and enclosing the remainder of the same.

2. An electrode gripping member comprising a conducting rod having the rear end thereof adapted to be engaged by a handle and comprising two integral jaws, one of said jaws comprising a forwardly extending portion and an integral rearwardly extending co-planar portion spaced from said first portion, said second jaw comprising the forward portion of said rod and being connected at its rear end to said second portion of said first jaw by an integral loop disposed in a plane normal to the plane of and between said first jaw portions, said second jaw extending from said loop forwardly between said first jaw portions at an angle intersecting the plane thereof and having its free end disposed in electrode gripping relation with respect to the forward end of said first jaw, and a spring positioned within said loop and acting on said second jaw in a direction to increase the tension of said jaws on an interposed electrode.

PASQUAL LA ROCK.
SIMON KUIKEN.

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